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(54) Hair growth compositions

(57) Hair growth compositions contain a non cyclic organosulphur compound as active agent. Typical compounds are allicin, alliin, ajoene or propyl sulphur oxides. Juices of onions and garlic may be used as the sources of these compounds.

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I. INTRODUCTION

A great number of men and women experience hair loss from the crown (or top) of their head caused by a condition known as androgenetic alopecia. Additionally, men and women alike experience shedding, thinning or diffusing of hair located on their scalp for a number of different reasons. Many people find these conditions socially unacceptable and take great measures to remedy the problem.

The present invention relates to a novel naturally extracted hair treatment product that promotes the growth of new hair cells while also stimulating the growth of existing hair cells to make the hair longer and thicker. The present invention uses only naturally extracted ingredients, rather than drugs or synthetical chemicals, to improve the hair coverage of the scalp. The present invention utilizes the sulphur oxides contained in garlic (organosulfoxides and allium) and onion (propyl sulfur oxides) in combination with allicin and ajoenes utilizing the polarity of the sulfoxide functional groups in the hair formula to react with the receptors on the surface of the cell membrane, thereby creating a vasodilating effect on the cell. This vasodilating effect on the cells, in turn, tend to increase their desire to feed on the nutrients essential for hair growth. In the preferred embodiment of this invention, organo sulfur nutrients, including allium, allin, allicins and ajoenes to effectively feed the hungered hair cells, thus, enhancing the growth of the hair in the scalp. Since

the preferred embodiment of present invention contains only natural organic compounds it is preferred over conventional treatments containing synthetic chemicals, and less likely to cause the patient receiving treatment to experience an allergic reaction.

II. DESCRIPTION OF THE PRIOR ART

The prior art hair care products used to treat and control hair loss all contain the synthetic drug called Minoxidil, which has a chemical name of 2,4-pyrimidinediamine, 6-(1-piperidinyl)-, 3-oxide. The best known product, Rogaine® contains 2% Minoxidil which means each one ml of Rogaine® solution contains 20mg of Minoxidil. Minoxidil is a synthetic chemical that lowers the blood pressure of the patient being treated by relaxing the arteries. Thus, Minoxidil acts to promote hair growth by relaxing the blood vessels in the scalp to increasing the blood supply to the hair cells. However, the functional groups in Minoxidil are primarily nitrogen oxygen based groups.

Without tying the present invention to a set theory, it is believed that a specific range of electronegative difference (roughly 20 to 35%) in the functional group of a hair treatment formula is necessary for optimal performance. Nitric oxide, in comparison with the sulfur oxide functional groups of the present invention, does not have as high a degree of electronegative difference. Specifically, the electronegativity difference of the nitrogen-oxygen functional group can be measured as $(3.5 - 3.0) / 3.5 = 15\%$. The electronegativity difference for a sulfur oxygen

functional group, by comparison is $(3.5 - 2.4) / 3.5 = 31\%$. It is believed that this increase in the electronegative difference of the functional group contained in the present invention, effectuates a better delivery of the hair restoration formula to the hair cells. Moreover, elemental sulfur is a necessary compound in the structure of the hair cells themselves. Thus the present formula, as opposed to the prior art, offers a double benefit of a functional group that insures better delivery of the formula to the target cells and also contributes to the building or growth of the hair cells themselves.

III. DETAILED DESCRIPTION OF THE INVENTION

The present invention involves an organic solution containing aliphatic organic sulfur oxide compounds containing double bonds, glucose, fructose, amino acids, vitamin A, allicin and ajoenes is applied to the scalp of a patient experiencing hair loss to stimulate and promote hair growth. The present invention contains only organic compounds, not synthetic or man made chemicals. The combination of the above ingredients act to function both as a catalyst and a set of nutrients in the promotion of hair growth.

The sulfur portion of the functional groups stimulate hair growth within the follicles due to the electronegativity exerted by the high electronegative difference between sulfur and oxygen. The resulting increase in the electronegativity of the functional sulfur oxide groups creates a vasodilating effect that stimulates the cells desire to obtain nutrients, thus promoting hair growth.

In effect, the cell becomes hungry and looks to feed on certain nutrients.

The organo sulfur oxide compounds of the present invention include allicin, allin, diallyl disulphide, ajoenes, and propyl sulfur oxides. These compounds are found naturally in garlic and onion. It is believed that the sulfur oxide within these compounds act as functional groups that interact with the receptors on the cell membranes of the hair. The sulfur oxide compounds ultimately cause a vasodilating effect within the target tissue. This effect promotes blood circulation and stimulates hair growth. Further, the sulfur contained in the sulfur oxide compounds ultimately acts as a building structure for hair follicles. Thus the presence of the sulfur and the sulfur oxide compounds forms a double benefit to the formula.

A second important type of nutrient found in the present formula is vitamin A. It is well established that vitamin A helps promote the motivation of hair cell growth. In the preferred embodiment of the present invention, vitamin A or its precursor beta-carotene is delivered to the hair cells through egg yolk, fennel, sage, thyme, and sesame oil. This is one of the nutrients that hair cells feed upon as a result of the vasodilating effect.

Vitamin E, which is contained in sesame oil, are another beneficial nutrient that helps promote growth of hair cells. Penetration of the nutrients through the skin of the patient receiving treatment is accelerated by castor oil and mineral oil,

which are rich in vitamin E. The vitamin E in these ingredients further aids the effectiveness of the vitamin A in the present invention.

Another group of nutrients in the preferred embodiment of the present invention includes glucose, fructose, and various amino acids which the hair cells feed and metabolizes upon as a result of the vasodilating effect caused by the organo sulfur compounds. The glucose, fructose and amino acids assist greatly in providing the required nutrients to promote hair growth. Further, it is believed that the main enzymes: glucose oxidase, catalase, beta-amylase and phosphatase, control the effect of the functional groups of the present formula. The glucose, fructose and the main enzymes can be found in honey, whereas, the other nutrients necessary to promote hair growth can be found in many organic substances such as sage, thyme, fennel, honey, egg yolk and sesame oil. An alternative preferred embodiment of the present invention utilizes a mixture of honey and royal jelly. Royal jelly is known in the art as a natural product excreted by the honeybee as food for a queen bee.

The preferred method of preparing the aliphatic hair conditioner of the present invention is set forth below. First, fresh red onion bulbs are peeled, cut into small pieces, preferably $\frac{1}{2}$ inch by $\frac{1}{2}$ inch squares. The cut onion pieces are placed into the feeding funnel of any standard juice extractor to produce onion juice. This process should be repeated until 16 oz. of onion

juice is produced. The 16 oz. of onion juice are put into container 12.

Next, several cloves of garlic are washed, peeled and cut into $\frac{1}{4}$ inch by $\frac{1}{4}$ inch squares. Four ounces of the cut garlic pieces are placed into a separate container 14.

Once the garlic has been properly cut, 10 oz. fresh egg yolk only is placed in container 16, 4 oz. of honey is placed in container 18, 4 oz. of petroleum jelly, such as Vaseline® brand petroleum jelly, is placed in container 20, 4 oz. of sesame oil is placed in container 22, 4 oz. of castor oil is placed in container 24, 10 oz. of mineral oil is placed in container 26, and 8 oz. of herbal extract is placed in container 28.

The herbal extract is made by first mixing 10 oz. of rose pedals with 20 oz. of purified water. The mixture is then boiled for one hour in a distiller to extract this essence of rose oil. The liquid distillate is collected and used as herbal extract. Once the distillate rose water is collected 16 oz. of the distillate water is mixed with 50 grams of thyme, 50 grams of fennel, 50 grams of sage and 3 grams of menthol to form a herbal mixture. The entire herbal mixture is heated at a temperature of 80°C for 30 minutes. After the entire herbal mixture has been heated for 30 minutes, the mixture is filtered through any common grade filter paper thus used, for instance, in filtering coffee, separating the particulate matter from the aqueous solution. The

aqueous solution is the herbal extract, of which 8 oz. are placed in a container 28.

Once the various ingredients are placed in containers 12, 14, 16, 18, 20, 22, 24, 26 and 28, the mixing process to form the aliphatic solution may begin. First, 4 oz. of the onion juice is transferred from container 12 into a collection container 30. The contents of container 30 are mixed to homogenize the contents. Second, 4 oz. of cut garlic is transferred from container 14 into the collection container 30. The 4 oz. of garlic are mixed with the contents of container 30 until the entire contents of container 30 are homogenized. Any standard type of mixer found in a kitchen can be used to homogenize the contents of container 30. Third, the 4 oz. of the egg yolk contained in container 16 are transferred to container 30. The contents of container 30 are then mixed with the 4 oz. of egg yolk until the entire contents of container 30 are homogenized. Fourth, 4 oz. of honey are transferred from container 18 to container 30. The entire contents of container 30 are then mixed with the 4 oz. of honey until the contents are homogenized. Fifth, 4 oz. of the petroleum jelly from container 20 are transferred to container 30. The contents of container 30 are then mixed with the 4 oz. of petroleum jelly to homogenize the petroleum jelly with the contents of container 30. Sixth, 4 oz. of the sesame oil in container 22 are transferred to container 30. The 4 oz. of sesame oil is then mixed with the contents of container 30 until the entire contents of container 30 are homogenized.

Seventh, 4 oz. of the castor oil in container 24 are transferred into container 30. The castor oil is mixed with the contents of container 30 until the entire contents of container 30 are homogenized. Eighth, the 4 oz. of the mineral oil in container 26 are transferred to the container 30. The 4 oz. of mineral oil from container 26 is then mixed with the contents of container 30 until the entire contents of container 30 are homogenized. Ninth, the 4 oz. of the herbal extract from container 28 are transferred to container 30. The 4 oz. of herbal extract from container 28 is mixed with the contents of container 30 until the entire contents of container 30 are homogenized.

The remaining onion juice in container 12, the remaining egg yolk in container 16, the remaining castor oil in container 26, the remaining mineral oil in container 26, and the remaining herbal extract in container 28 are placed in container 32 and mixed until the entire contents of container 32 are homogenized. The homogenized contents of container 30 and container 32 are transferred to container 34 and then the contents of container 30 are mixed with the contents of container 32 until the entire solution is homogenized. The homogenized contents of container 34 comprises the preferred embodiment of the present invention. Ethanol may be added to the homogenized contents of container 30 as a fragrance. No heat is added to the solution.

The process for manufacturing the present formula thus requires 36 mixing equal parts by weight onion juice, garlic,

petroleum jelly, sesame oil, castor oil, mineral oil, herbal extract, honey, and egg yolk in a container. Second, the process requires 38 pouring the contents of said container through a juicer. The next process step requires 40 homogenizing the contents of said container, which involves further mixing and further passes through the juicer. Next, the process involves 42 a second mixing of further onion juice, egg yolk, castor oil, mineral oil, and herbal extract into the contents of the container. Finally, the contents of the container are 44 homogenized for a second time. Optionally, the process can further involve 46 adding fragrances placed in an ethanol solution to the contents of the container and 48 further homogenizing the resulting contents in the container.

Once the aliphatic hair care solution is created, it can be applied to the scalp of a person experiencing androgenetic alopecia hair loss or thinning of hair. The aliphatic hair care solution should be applied to the scalp of the patient in 1 ml doses. The 1 ml dose of the solution should be applied to the scalp twice a day after the patient's hair has been washed and dried. With each treatment, the solution should be rubbed into the scalp for a period or at least five minutes, and must remain on the scalp for at least 5 hours to ensure penetration into the scalp.

Of course, it should be noted that various changes and modifications to the preferred embodiments of this invention will be apparent to those skilled in the art, such changes and

modifications can be made without departing from the spirit and scope of the present invention. It is, therefore, intended that such changes and modifications be covered by the following claims.

CLAIMS

I claim:

1. A composition for the stimulation of hair growth, said composition comprising between about 10 and 90 percent by weight of organic sulfur compound (non-cyclic) in aqueous solution.

2. The composition of claim 1, wherein said aqueous solution contains honey.

3. The composition of claim 2, wherein said honey comprises at least ten percent by weight royal jelly.

4. The composition of claim 1, wherein said organic sulfur compound is a sulfur containing olefin.

5. The composition of claim 4 wherein said olefin is selected from the group consisting of allicin, allin, ajoenes, and propyl sulfur oxides.

6. The composition of claim 1, wherein said organic sulfur compound includes a mixture of onion juice and garlic.

7. The composition of claim 1 further comprising between 3 and 40 percent by weight of a naturally derived amino acid composition in an aqueous solution, said derived from the group consisting of thyme, fennel, sage, egg yolk and honey.

8. The composition of claim 1 further comprising between 3 and 40 percent by weight an enzyme in an aqueous solution, said enzyme selected from the group comprising glucose oxidase, catalase, beta-amylase, and phosphatase.

9. The composition of claim 1, wherein said organic sulfur compound has a plurality of elements forming a functional group for interacting with hair cells, said elements of said functional group having an electronegativity difference of between 20% to 35%.

10. A composition for the stimulation of hair growth, said composition comprising:

- a. between about 15 and 20 percent by weight of onion juice;
- b. between about 3 and 5 percent by weight of allicin and diallyl sulfides in an aqueous solution;
- c. between about 3 and 5 percent by weight of honey;
- d. between about 3 and 5 percent by weight of petroleum jelly;
- e. between about 3 and 5 percent by weight of sesame oil;
- f. between about 9 and 13 percent by weight of egg yolk;
- g. between about 9 and 13 percent by weight of castor oil;
- h. between about 7 and 10 percent by weight of herbal extract, and;
- i. between about 30 and 40 percent by weight of mineral oil.

11. The composition of claim 10, wherein said herbal extract comprises 70 to 80 percent by weight of rose water, 7 to 10 percent

by weight thyme, 7 to 10 percent by weight fennel, 7 to 10 percent by weight sage, and less than one percent by weight menthol.

12. A process for manufacturing a hair growth formula, said process comprising the steps of:

- a. mixing onion juice, garlic, petroleum jelly, sesame oil, castor oil, mineral oil, herbal extract, honey, egg yolk;
- b. pouring the mixture through a juicer, and;
- c. homogenizing the output of said juicer.

13. The process of claim 12 further comprising the steps of adding ethanol to the homogenized output of said juicer and then further homogenizing the resulting mixture.

14. A process for manufacturing a hair growth formula, said process comprising the steps of:

- a. ~~mixing equal parts~~ by weight onion juice, garlic, petroleum jelly, ~~sesame oil, castor oil, mineral oil,~~ herbal extract, honey, and egg yolk in a container;

- b. pouring the contents of said container through a juicer;

- c. homogenizing the contents of said container;

- d. further mixing of further onion juice, egg yolk, castor oil, mineral oil, and herbal extract into said container;

- e. further homogenizing of the contents of said container

15. The process of claim 14 further comprising the steps of adding fragrances placed in an ethanol solution to the contents of

the container and further homogenizing the resulting contents in
the container.

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Examiner's report to the Comptroller under Section 17
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17 JULY 1995

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE: WPI, CLAIMS, CAS ONLINE, EMBASE, BIOSIS, MEDLINE, JAPIO

Documents considered relevant following a search in respect of Claims :-
1-15

Categories of documents

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Category	Identity of document and relevant passages	Relevant to claim(s)
X	GB 493378 (MEGYESY) see whole document	1, 4, 5
X	WPI Abstract Accession No 93-176578/22 & DE 4138680 A1 (GITSCHKOV) see abstract	1, 4, 5
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